

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A phosphor substrate, comprising a nitride containing at least one element selected from Group XIII (IUPAC 1989) having:

a general formula XN , wherein X is at least one element selected from B, Al, Ga and In,

a general formula $XN:Y$, wherein X is at least one element selected from B, Al, Ga and In, and Y is at least one element selected from Be, Mg, Ca, Sr, Ba, Zn, Cd and Hg, or

a general formula $XN:Y,Z$, wherein X is at least one element selected from B, Al, Ga and In, Y is at least one element selected from Be, Mg, Ca, Sr, Ba, Zn, Cd and Hg, and Z is at least one element selected from C, Si, Ge, Sn, Pb, O and S; and

wherein said phosphor substrate contains alkali metals at a concentration of 0.1 ppm or more.

2.-7. (Cancelled)

8. (Previously Presented) The phosphor substrate according to claim 1, wherein said nitride has said general formula $XN:Y$, wherein said Y is a dopant having a concentration of 10^{17} to $10^{21}/\text{cm}^3$ or said general formula $XN:Y,Z$, wherein said Y and said Z are dopants having concentrations of 10^{17} to $10^{21}/\text{cm}^3$.

9. (Currently Amended) The phosphor substrate according to claim 1, wherein said phosphor substrate has $[[a]]$ an off-angle between 0.05 and 0.2 degree.

10. (Previously Presented) The phosphor substrate according to claim 1, wherein the roughness of said phosphor substrate surface is 10\AA or less.

11. (Previously Presented) The phosphor substrate according to claim 1, wherein said phosphor substrate has a surface dislocation density of $10^6/\text{cm}^2$ or less.

12. (Previously Presented) The phosphor substrate according to claim 1, wherein said phosphor substrate has a full width at half maximum of X-ray diffraction from a surface plane of 600 arcsec or less.

13. (Previously Presented) The phosphor substrate according to claim 1, wherein said phosphor substrate has the crystal structure of a wurtzite.

14. (Canceled)

15. (Previously Presented) The phosphor substrate according to claim 1, wherein a cap layer in the form of GaN or AlGaIn is provided on said phosphor substrate.

16. (Previously Presented) The phosphor substrate according to claim 1, wherein said phosphor substrate consists of GaN:Zn.

17. (Previously Presented) The phosphor substrate according to claim 1, wherein said phosphor substrate is a single crystal substrate on which a gallium nitride crystal can be grown in the vapor phase.

18. (Previously Presented) A light emitting device provided with the phosphor substrate according to claim 1, wherein said light emitting device can excite said phosphor substrate.

19. (Previously Presented) The light emitting device according to claim 18, wherein the light emitting wavelength region of said light emitting device is set within the ultraviolet region.

20. (Previously Presented) The light emitting device according to claim 18, wherein at least one phosphor layer is provided on said phosphor substrate.

21. (Previously Presented) The light emitting device according to claim 20, wherein said phosphor layer comprises the nitride phosphor activated by at least one element of rare earth selected from the group consisting of Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er and Lu, and contains N and at least one element of Group II selected from the group consisting of Be, Mg, Ca, Sr, Ba and Zn, and at least one element of Group IV selected from the group consisting of C, Si, Ge, Sn, Ti, Zr and Hf.

22. (Previously Presented) The light emitting device according to claim 18 or 20, wherein said light emitting device is in the form of flip chip type having the light extraction plane on the side of said phosphor substrate.

23. (Previously Presented) The light emitting device according to claim 20, wherein said light emitting device is able to emit white light by mixing light emitted from said phosphor substrate and a part of light emitted from said phosphor layer.

24. (Previously Presented) A phosphor substrate comprising a nitride containing at least one element selected from Group XIII (IUPAC 1989) having:

a general formula XN , wherein X is at least one element selected from B, Al, Ga and In,

a general formula $XN:Y$, wherein X is at least one element selected from B, Al, Ga and In, and Y is at least one element selected from Be, Mg, Ca, Sr, Ba, Zn, Cd and Hg, or

a general formula $XN:Y,Z$, wherein X is at least one element selected from B, Al, Ga and In, and Y is at least one element selected from Be, Mg, Ca, Sr, Ba, Zn, Cd and Hg, and Z is at least one element selected from C, Si, Ge, Sn, Pb, O and S; and

wherein said phosphor substrate has a surface dislocation density of $10^6/\text{cm}^2$ or less and a full width at half maximum of X-ray diffraction from a surface plane of 300 arcsec or less, and contains alkali metals at a concentration of 0.1 ppm or more.

25. (Canceled)

26. (Previously Presented) The phosphor substrate according to claim 1, wherein said phosphor substrate is prepared by crystallization from a supercritical ammonia-containing solution.